THE AMERICAN JOURNAL OF PHYSIOLOGY

VOLUME 158

July–September 1949

BOARD OF PUBLICATION TRUSTEES

W. O. Fenn, *Chairman* R. F. Pitts Frank C. Mann

EDITORIAL BOARD

J. H. Comroe, Jr. F. G. Hall R. F. Pitts
Hallowell Davis W. G. Hamilton J. P. Quigley
H. E. Essex E. M. Landis David Rapport
R. W. Gerard F. W. D. Lukens H. P. Smith

Milton O. Lee, *Managing Editor*

THE AMERICAN PHYSIOLOGICAL SOCIETY
Washington, D. C.

XUM

610.5
A5
J86
P6

COPYRIGHT 1949, BY
THE AMERICAN PHYSIOLOGICAL SOCIETY, INC.

WAVERLY PRESS, INC.
BALTIMORE, MARYLAND
Made in United States of America

XUM

Medical
Library
Cop. 1

Contents of Volume 158

No. 1. JULY 1949

STUDIES ON THE PATHOGENESIS OF AMMONIUM PULMONARY EDEMA *Harold Koenig and Ruth Koenig* 1

TYPHOID-PARATYPHOID VACCINE AND RESPIRATORY RESPONSE TO THE INHALATION OF CARBON DIOXIDE *F. A. Ellis, R. Grant and V. E. Hall* 16

A CONCEPT OF MEAN ALVEOLAR AIR AND THE VENTILATION-BLOODFLOW RELATIONSHIPS DURING PULMONARY GAS EXCHANGE *Hermann Rahn* 21

ADRENERGIC MECHANISM OF VAGAL CARDIOSTIMULATION *S. Middleton, H. H. Middleton and J. Toha* 31

A STUDY OF THE INFLUENCE OF DL-TRYPTOPHAN UPON BLOOD SUGAR LEVELS *George V. Mann, Stanley S. Kahn and Frederick J. Stare* 38

DISCHARGE OF ADRENOCORTICOTROPHIC HORMONE IN THE ABSENCE OF NEURAL CONNECTIONS BETWEEN THE PITUITARY AND HYPOTHALAMUS *Chi-Ping Cheng, George Sayers, Louis S. Goodman and Chester A. Swinyard* 45

RENOTROPHIC-ANDROGENIC AND SOMATOTROPHIC PROPERTIES OF FURTHER STEROIDS *Charles D. Kochakian* 51

INFLUENCE OF PREVIOUS DIET ON METABOLISM DURING FASTING *Sidney Roberts and Leo T. Samuels* 57

MECHANISMS OF METABOLIC INHIBITION BY HEAVY METALS *Ervin Kaplan, Norman R. Joseph and Paul W. Sheffler* 63

ERYTHROCYTE AGE AND CHOLINESTERASE ACTIVITY *Jack A. Pritchard* 72

INFLUENCE OF SNAKE VENOM ON MAMMALIAN ERYTHROCYTES IN VITRO *V. B. Philpot, Jr.* 77

PLATELETS AS FOCI IN THE COAGULATION OF BLOOD *Frank D. Mann, Margaret Hurn and Don R. Mathieson* 84

A STUDY OF PULMONARY VENOUS AND ARTERIAL PRESSURES AND OTHER VARIABLES IN THE ANESTHETIZED DOG BY FLEXIBLE CATHETER TECHNIQUES *Francis J. Haddy, Gilbert S. Campbell, Wayne L. Adams and M. B. Visscher* 89

CIRCULATORY CHANGES AND PULMONARY LESIONS IN DOGS FOLLOWING INCREASED INTRACRANIAL PRESSURE, AND THE EFFECT OF ATROPINE UPON SUCH CHANGES *Gilbert S. Campbell, Francis J. Haddy, Wayne L. Adams and M. B. Visscher* 96

CIRCULATORY CHANGES IN THE DOG PRODUCED BY ACUTE ARTERIOVENOUS FISTULA *A. Van Loo and E. C. Heringman* 103

EFFECTS OF GRADED PRESSURES ON THE TAIL OF THE MOUSE *Arnold L. Lehmann and Roger M. Reinecke* 113

EFFECT OF CARBON DIOXIDE ON INTESTINAL MOTILITY *David W. Northup, J. Clifford Stickney and Edward J. Van Liere* 119

XUM

STIMULATING EFFECT OF SUGAR, FAT, AND MEAT MEALS ON DUODENAL SECRETION IN THE DOG *D. Blickenstaff, M. I. Grossman and A. C. Ivy* 122
SECRETION OF INTESTINAL JUICE DURING HYPERCALCEMIA *Harold J. Murdock, Jr. and E. S. Nassel* 129
ROLE OF THE CENTRAL NERVOUS SYSTEM IN THE BODY TEMPERATURE-ARTERIAL PRESSURE RELATIONSHIP *S. Rodbard, M. Tinsley, H. Bornstein and L. Taylor* 135
DENERVATION AND THE EXCITABILITY OF CERTAIN MUSCULAR EFFECTORS *F. Huidobro and R. Poblete* 141
INCREASED RATE OF UREA FORMATION FOLLOWING REMOVAL OF RENAL TISSUE *Edward C. Persike and T. Addis* 149

No. 2. AUGUST 1949

MEDULLARY ORIGIN OF RESPIRATORY PERIODICITY IN THE DOG *Hebbel E. Hoff and C. G. Breckenridge* 157
LOCALIZATION OF THE SITE OF ACTION OF A PULMONARY IRRITANT, DIPHOSGENE *J. M. Tobias, S. Postel, H. M. Patt, C. C. Lushbaugh, M. N. Swift and R. W. Gerard* 173
EFFECT OF VARIATIONS IN NUTRITIVE DENSITY ON INTAKE OF FOOD OF DOGS AND RATS *Henry D. Janowitz and M. I. Grossman* 184
SECRETION OF GASTRIC MUCIN IN RESPONSE TO SHAM-FEEDING AND HISTAMINE STIMULATION *S. A. Komarov, Harry Shay and Herman Siplet* 194
PROPULSIVE MOTILITY OF THE SMALL INTESTINE IN ADULT DOGS AND PUPS *J. Clifford Stickney, Edward J. Van Liere and David W. Northup* 201
INTRAVENOUS CALCIUM SALTS AND RENAL EXCRETION IN THE DOG *A. V. Wolf and Stanley M. Ball* 205
UREA DIURESIS AND RENAL EXCRETION OF ELECTROLYTES *Gilbert H. Mudge, James Foulks and Alfred Gilman* 218
TRANSCAPILLARY EXCHANGE OF CHLORIDE IN THE GUINEA PIG AS DETERMINED WITH RADIOCHLORIDE *Dean B. Cowie, Louis B. Flexner and Walter S. Wilde* 231
VOLUME ELASTIC PROPERTIES OF THE RIGHT AND LEFT ATRIUM *Robert C. Little* 237
DYNAMICS OF EXPERIMENTAL ATRIAL SEPTAL DEFECTS *Robert C. Little, David F. Opdyke and John G. Hawley* 241
UTILIZATION OF C^{14} LABELLED PYRUVATE AND ACETATE BY RAT HEART SLICES *O. H. Pearson, A. Baird Hastings and H. Bunting* 251
UTILIZATION OF C^{14} LABELLED PYRUVATE AND ACETATE IN DIABETIC RAT HEART AND DIAPHRAGM *O. H. Pearson, C. K. Hsieh, C. H. Dutoit and A. B. Hastings* 261

XUM

EFFECTS OF VARIOUS SUBSTRATES UPON ISOLATED PERFUSED RAT HEART *Kazuko Nakamura, Paul R. Saunders, J. Leyden Webb, Homer C. Lawson and Clinton H. Thienes* 269

ACTION OF A NEW PHOSPHORYLATION DERIVATIVE OF THIAMINE ON HEART: A STUDY OF THIAMINE TRIPHOSPHORIC ACID *Cyrille Plotka, Michel Peterfalvi, Robert Jequier and Léon Velluz* 279

TRANSFORMATION OF ARTERIAL PULSE WAVE BETWEEN AORTIC ARCH AND FEMORAL ARTERY *Robert S. Alexander* 287

ARTERIAL PULSE DYNAMICS IN AORTIC INSUFFICIENCY *Robert S. Alexander* 294

HEPATIC VENOUS CIRCULATION WITH SPECIAL REFERENCE TO SPHINCTERIC MECHANISM *Walton D. Thomas and Hiram E. Essex* 303

HYPOPROTHROMBINEMIA DUE TO LOSS OF INTESTINAL LYMPH *Joseph D. Mann, Frank D. Mann and Jesse Bollman* 311

EFFECT OF ASCORBIC ACID, D-ISOASCORBIC ACID AND GLUCOASCORBIC ACID ON COBALT POLYCYTHEMIA IN RAT AND RABBIT *Stanley Levey* 315

REACTIVITY OF BLOOD VESSELS IN SYMPATHECTOMIZED HUMAN LEG *Irwin D. Stein, Karl Harpuder and Jacob Byer* 319

No. 3. SEPTEMBER 1949

HYDROLYSIS OF CHOLINE ESTERS IN THE PRESENCE OF ADRENALIN *Wilbur M. Benson and Walter J. Meek* 327

INACTIVATION OR REMOVAL OF INSULIN BY THE LIVER *Harry F. Weisberg, Adolph Friedman and Rachmiel Levine* 332

SEASONAL CHANGES IN THE THYROID GLAND AND EFFECTS OF THYROIDECTOMY IN THE MALLARD, IN RELATION TO MOULT *E. O. Höhn* 337

FLUCTUATIONS OF SERUM CHOLINE IN WOMEN *Jørgen Ulrik Schlegel* 345

GLYCOGENIC EFFECT OF ADRENAL CORTICAL EXTRACT *Gale H. Keyes and Vincent C. Kelley* 351

GLUCOSE TOLERANCE OF DOGS AS ALTERED BY ATMOSPHERIC DECOMPRESSION *Gale H. Keyes and Vincent C. Kelley* 358

ELECTROLYTIC RESISTANCE OF THE BLOOD CLOT *Henry H. Henstell* 367

ELECTROLYTIC RESISTANCE OF THE BLOOD CLOT, RESISTANCE CLOTTING TIME, ONSET OF CLOT RETRACTION AND CLOT RESISTANCE *Henry H. Henstell* 379

FIBRIN, A FACTOR INFLUENCING CONSUMPTION OF PROTHROMBIN IN COAGULATION *Armand J. Quick and Jean E. Favre-Gilly* 387

BEHAVIOR OF LEUKOCYTES OF RABBIT DURING PERIODS OF TRANSIENT LEUKOPENIA VARIOUSLY INDUCED *Hiram E. Essex and Alfonso Graña* 396

AGE, BODY WEIGHT AND BLOOD HYPERTENSINOGEN *G. Carl Rau* 401

MECHANISM OF VASCULAR ACTION OF TETRAETHYLAMMONIUM CHLORIDE *Irvine H. Page* 403

XUM

CARDIOVASCULAR EFFECTS OF LARGE VOLUMES OF ISOTONIC SALINE INFUSED INTRAVENOUSLY INTO DOGS FOLLOWING SEVERE HEMORRHAGE *Monica Reynolds* 418

EFFECTS OF CHANGES IN BODY TEMPERATURE AND INSPIRED AIR HUMIDITY ON LUNG EDEMA AND HEMORRHAGE *F. J. Haddy, G. S. Campbell and M. B. Visscher* 429

PERSISTENT UNILATERAL RENAL HYPERTENSION IN THE RABBIT *J. Flasher, D. R. Drury and S. Sobin* 433

EFFECTS OF REMOVAL OF 'ISCHEMIC' KIDNEY IN RABBITS WITH UNILATERAL RENAL HYPERTENSION, AS COMPARED TO UNILATERAL NEPHRECTOMY IN NORMAL RABBITS *J. Flasher and D. R. Drury* 438

INFLUENCE OF SODIUM LOAD ON SODIUM EXCRETION *D. M. Green and A. Farah* 444

ALTERATION OF NEURON EXCITABILITY BY RETROGRADE DEGENERATION *Berry Campbell, Vernon H. Mark and Edgar L. Gasteiger* 457

EFFECT OF 2-METHYL NAPHTHOQUINONE ON ACTION POTENTIAL OF NERVE AND MUSCLE *Clara Torda and Harold G. Wolff* 465

MUSCLE RECOVERY AFTER NERVE SECTION AND SUTURE *G. Clinton Knowlton* 470

RESPONSES ELICITED BY COMBINED STIMULATION OF PAIRS OF FIXED ELECTRODES IN UNANESTHETIZED MONKEY *George Clark and James W. Ward* 474

EFFECT OF CARBON DIOXIDE ON BRAIN GLUCOSE, LACTATE, PYRUVATE AND PHOSPHATES *James A. Bain and J. Raymond Klein* 478

418

429 ✓

433

438

444

457

465

470

474

478 ✓

XUM